

Preface

Professor Zhexian Wan is a distinguished figure in contemporary Chinese mathematics. Prof. Wan was born on November 7, 1927, in Shandong Province of China. In 1944, during the midst of the Anti-Japanese war, Wan entered National Southwest Associated University in Kunming, a transitory institute merged from three universities: Peking, Tsinghua, and Nankai. After the war, he graduated from Tsinghua in 1948 in Beijing. In 1950, Prof. Wan started working at the Institute of Mathematics, Chinese Academy of Sciences (CAS). In 1984, he moved to the Institute of Systems Science, CAS, and has been there since then.

During his college years, Wan studied with many masters of the time, including Shiing-Shen Chern and Pao-lu Hsu. In particular, he attended several courses taught by Hsio-fu Tuan, thus laying down a solid foundation in algebra. In the 1950's, while working at the CAS as a young researcher, he studied classical groups under the supervision of Loo-Keng Hua, the leader of domestic Chinese mathematics during the last century. This period was important in shaping his mathematical career. Today, Prof. Wan is widely considered one of the major successors of Hua.

Prof. Wan has made influential contributions in a wide array of areas, such as algebra, classical groups, coding theory, cryptology, finite fields, finite geometry, and combinatorics. Wan overcame unimaginable difficulties in developing his mathematics. Over the decades, he has published over 140 research papers on various academic journals and over 20 popular mathematical essays, in addition to at least 20 influential monographs.

In particular, Wan is regarded one of the major founders of modern combinatorics and graph theory research in China. In 1958, he published a paper entitled “A proof for a graphic method for solving the transportation problem” in *Shuxue Tongbao* in Chinese. This is probably the earliest work on graph theory in China. Later in 1962, the same paper was translated into English and appeared in *Scientia Sinica*. His book “Studies in Finite Geometry and the Construction of Incomplete Block Designs”, coauthored with Zongduo Dai, Xuning Feng and Benfu Yang and published by Science Press in 1966, is a pioneering work leading many Chinese mathematicians into the fields of combinatorial research. Two later books “Geometry of Classical Groups over Finite Fields”, published by Studentlitteratur and Chartwell-Bratt Ltd. in 1993, 2nd edition published by Science Press in 2003, and “Geometry of Matrices”, published by World Scientific in 1996, are both must-read classics for mathematicians working in finite geometries and related areas.

Because of his far-reaching influence, Prof. Wan is on the editorial boards of several international journals, for instance *Algebra Colloquium* (editor-in-chief); *Annals of Combinatorics*; *Discrete Applied Mathematics*; *Finite Fields and Their Applications*; and *Journal of*

Combinatorics, Information and Systems Science. Since the founding of the Chinese Society of Combinatorics and Graph Theory, the official organization for all combinatorists and graph theorists in China, he has been elected to be its Honorary President. Besides this, Prof. Wan has also been the Chairman of the academic committee of the Center for Combinatorics based at Nankai University, as well as that of the Center for Discrete Mathematics and Theoretical Computer Science based at Fuzhou University.

Prof. Wan is not only a deep mathematician, but also a wonderful teacher and an admirable human being. He has supervised many doctor and master students, in both pure and applied mathematics, most of whom have now become well-known mathematicians. To his students, he is a knowledgeable professor and a respected teacher on one hand, while nonetheless being a caring friend on the other hand. He has spent a lifetime on his beloved field of mathematics and has become a source of inspiration for several generations of Chinese mathematicians.

Due to his extraordinary achievements, in 1991, Prof. Wan was elected to be an academicien of the Chinese Academy of Sciences.

This special issue is dedicated to Professor Wan, and we are very grateful to all the contributors and referees. It includes 12 research papers, but certainly not all areas of Prof. Wan's specialties could be covered. On the occasion of his 80th birthday, we sincerely send our best wishes to our dear Prof. Zhexion Wan for his continuous leadership and his health!

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